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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,676	09/14/2001	Christine Libon	PF98PCTSEQ/dln	9130

25666 7590 05/02/2007

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EXAMINER	
ZEMAN, ROBERT A	

ART UNIT	PAPER NUMBER
1645	

MAIL DATE	DELIVERY MODE
05/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/936,676	LIBON ET AL.	
	Examiner	Art Unit	
	Robert A. Zeman	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *34,36-38,41-43,49-51 and 55-72* is/are pending in the application.

4a) Of the above claim(s) *36,37 and 55-71* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *34,38,41-43,49-51 and 72* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The amendment filed 1-16-2007 is acknowledged. Claims 34, 38, 41-43, 49-50 and 72 have been amended. Claims 35, 39-40, 44-48 and 52-54 have been canceled. Claims 34, 36-38, 41-43, 49-51 and 55-72 are pending. Claims 36-37 and 55-71 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Claims 34, 38, 41-43, 49-51 and 72 are currently under examination.

Claim Rejections Withdrawn

The rejection of claims 34 and 72 under 35 U.S.C. 112, second paragraph, as being rendered vague and indefinite by the use of the term "orienting" is withdrawn in light of the amendment thereto.

The rejection of claims 34 and 72 under 35 U.S.C. 112, second paragraph, as being rendered vague and indefinite by the use of the phrase "in which the Th1 response is close to or greater than the Th2 type response" is withdrawn in light of the amendment thereto.

The rejection of claim 38 under 35 U.S.C. 112, second paragraph, for reciting improper Markush language is withdrawn in light of the amendment thereto.

The rejection of claim 39 under 35 U.S.C. 112, second paragraph, as being difficult to interpret since Applicant uses the function of the *Klebsiella* membrane fraction (i.e. inducing a Th1 response directed to the antigen) to define the antigen is withdrawn. Cancellation of said claim has rendered the rejection moot.

The rejection of claim 41 under 35 U.S.C. 112, second paragraph, as being rendered vague and indefinite by the use of the term "capable of " is withdrawn in light of the amendment thereto.

The rejection of claim 42 under 35 U.S.C. 112, second paragraph, as being rendered vague and indefinite by the use of the term "derived from" is withdrawn in light of the amendment thereto.

The rejection of claims 43 and 48 under 35 U.S.C. 112, second paragraph, as being rendered vague and indefinite by the use of the term "genetic recombination" is withdrawn in light of the amendment to claim 43 and the cancellation of claim 48.

The rejection of claim 46 under 35 U.S.C. 112, second paragraph, as being rendered vague and indefinite by the use of the phrase "introduced into at least one of the compounds contained in the membrane fraction and/or in the antigen..." is withdrawn. Cancellation of said claim has rendered the rejection moot.

The rejection of claim 49 under 35 U.S.C. 112, second paragraph, as being rendered vague and indefinite by the term "carry the membrane fraction...in a form...which makes it possible to enhance..." is withdrawn in light of the amendment thereto.

The rejection of claims 49 and 53 under 35 U.S.C. 112, second paragraph, as being rendered vague and indefinite by the use of the phrase "makes it possible" is withdrawn in light of the amendment to claim 49 and the cancellation of claim 53.

The rejection of claim 51 under 35 U.S.C. 112, second paragraph, for reciting improper Markush language is withdrawn in light of the amendment thereto.

The rejection of claims 52 and 54 under 35 U.S.C. 112, second paragraph, as being rendered vague and indefinite by the use of the phrase "such as" is withdrawn. Cancellation of said claims has rendered the rejection moot.

The rejection of claims 52 and 54 under 35 U.S.C. 112, second paragraph, as being for reciting improper Markush language is withdrawn. Cancellation of said claims has rendered the rejection moot.

Claim Rejections Maintained

35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

The rejection of claims 34, 38 and 72 Claims 34, 38-40, 44, 48 and 72 under 35 U.S.C. 102(b) as being anticipated by Rauly et al. (Research in Immunology, Vol 149 No. 1, page 99, Jan 1998) is maintained for reasons of record. The cancellation of claims 39-40, 44 and 48 has rendered the rejection of those claims moot.

Applicant argues:

1. The disclose mixed Th1/Th2 does not meet the limitation of "the Th1 response is close to the Th2 response".

2. Applicant's have demonstrated that a crude membrane fraction elicits an immune response wherein the Th1 response is close to the Th2 response.

3. The crude membrane preparation is materially distinct from purified recombinant P40 protein preparation.

4. Claims 34 and 72 have been amended to limit the invention to the use of a crude membrane extract.

Applicant's arguments have been fully considered and deemed non-persuasive.

With regard to Points 1 and 2, the definition of "close to" as defined on page 3 of the specification encompasses IgG2a levels that are both greater and less than 0.5 to 0.75 times that of the IgG1 level due to the use of the phrase "at least equal". Consequently, it is deemed the mixed Th1/Th2 response induced by the composition of Rauly et al. meets Applicant's definition of "close to".

With regard to Points 3 and 4, contrary to Applicant's assertion, the amended claim language to claims 34 and 72 constitute purifying the membrane fraction.

The instant claims are drawn to methods of inducing mixed Th1/Th2 type response against an antigen utilizing *Klebsiella pneumonia* membrane fractions combined (bound) with an antigen wherein said antigen if from an infectious agent or is associated with tumor cells wherein the Th1 response is "close to" the Th2 response. Moreover, said membrane fraction/antigen complexes may be recombinantly produced and may be part of pharmaceutical compositions.

As outlined previously, Rauly et al. disclose the use compositions comprising the outer membrane protein A (OmpA) of *Klebsiella pneumoniae* as an immunopotentiator (carrier/adjuvant). Said protein was recombinantly produced and coupled to a B-cell epitope derived from the respiratory syncytial virus. The resulting complex (rP40-G1) induces a mixed Th1/Th2 response when administered to animals.

The rejection of claims 34, 38, 41, 43, 49 and 72 are rejected under 35 U.S.C. 102(e) as being anticipated by Binz et al. (U.S. Patent 6,197,929) is maintained for reasons of record. The cancellation of claims 39-40, 44-45 and 48 have rendered the rejection of those claims moot.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Applicant argues:

1. The disclose mixed Th1/Th2 does not meet the limitation of "the Th1 response is close to the Th2 response".

2. Applicant's have demonstrated that a crude membrane fraction elicits an immune response wherein the Th1 response is close to the Th2 response.

3. The crude membrane preparation is materially distinct from purified recombinant P40 protein preparation.

4. Claims 34 and 72 have been amended to limit the invention to the use of a crude membrane extract.

Applicant's arguments have been fully considered and deemed non-persuasive.

With regard to Points 1 and 2, the definition of "close to" as defined on page 3 of the specification encompasses IgG2a levels that are both greater and less than 0.5 to 0.75 times that of the IgG1 level due to the use of the phrase "at least equal". Consequently, it is deemed the mixed Th1/Th2 response induced by the composition of Binz et al. meets Applicant's definition of "close to".

With regard to Points 3 and 4, contrary to Applicant's assertion, the amended claim language to claims 34 and 72 constitute purifying the membrane fraction.

The instant claims are drawn to methods of inducing a Th1 or mixed Th1/Th2 type response against an antigen utilizing *Klebsiella pneumonia* membrane fractions combined (or covalently bound) with an antigen wherein said antigen if from an infectious agent or is associated with tumor cells. Moreover, said membrane fraction/antigen complexes may be

recombinantly produced, may further comprise peptide/protein that can bind mammalian serum albumin and may be part of pharmaceutical compositions.

Binz et al. disclose the use compositions comprising the outer membrane protein A (OmpA) of *Klebsiella pneumoniae* as an immunopotentiator (carrier/adjuvant). Said protein was recombinantly produced and coupled to protein G of the respiratory syncytial virus (RSV) [see column 3, lines 25-32). Said conjugates may be coupled either covalently or recombinantly [see column 3, lines 9-19] and may further comprise a peptide/protein that can bind mammalian serum albumin [see column 3, lines 20-25] and can be used in pharmaceutical compositions comprising pharmaceutically acceptable excipients [see column 3, lines 49-54]. The disclosed membrane fraction protein:antigen complex (P40-Ext) was disclosed to induce a Th1 response when administered to animals as exemplified by the production of a highly quantitative delayed hypersensitivity response [see column 9, lines 35-41] and macrophage activation [see column 9, lines 50-55].

New Grounds of Rejection

35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 34, 38, 41-43, 49-51 and 72 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 34 and 72 are rendered vague and indefinite by the use of the phrase "the Th1 response is close to the Th2 response...". It is unclear what is meant by said term as it is not explicitly defined in the specification. The specification uses relative terms in its definition making it impossible to determine the metes and bounds of the instant invention. The specification uses the phrase "at least equal to .75 times..." but gives no indication whether the definition encompasses ratios greater than .75 times or those less than .75 times.

Claim 49 is rendered vague and indefinite by the use of the term "carries" it is unclear what is meant by said term as it is not explicitly defined in the specification. Consequently, it is impossible to determine the metes and bounds of the claimed invention.

Conclusion

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

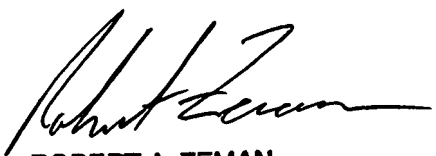
CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Zeman whose telephone number is (571) 272-0866. The examiner can normally be reached on Mon - Thur. 7am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Siew can be reached on (571) 272-0787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



ROBERT A. ZEMAN
PRIMARY EXAMINER

April 29, 2007